

### ABSTRACT

A method and apparatus for automatically detecting breast tumors and lesions in images, including ultrasound, digital and analog mammograms, and MRI images, is provided. An image of a breast is acquired. The image is filtered and contrast of the image is enhanced.

5 Intensity and texture classifiers are applied to each pixel in the image, the classifiers indicative of the probability of the pixel corresponding to a tumor. A seed point is identified within the image, and a region of interest is grown around the seed point. Directional gradients are calculated for each pixel of the image. Boundary points of the region of interest are identified. The boundary points are passed as inputs to a deformable model. The deformable model

10 processes the boundary points to indicate the presence or absence of a tumor.